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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,134	01/16/2004	Syuji Nakai	011900-327	5027

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EXAMINER

YEE, DEBORAH

ART UNIT PAPER NUMBER

1742

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/758,134

Applicant(s)

NAKAI ET AL.

Examiner

Deborah Yee

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27 to 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27 to 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/989530.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5-11-04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 27 is rejected under 35 U.S.C. 102(b) as being anticipated by Japanese patent 406287640 .
3. The English abstract of JP'640 teaches a method of making ultra-low carbon steel sheet comprising the steps of treating molten metal to decarburization by vacuum degassing and then deoxidization with Al followed by continuous casting and hot rolling which meets claim 27.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 28 to 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 406287640 in view of Olsson (US Patent 4,113,166), Taylor (US Patent 3,512,574) or Japanese patent 2672889.

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6. Similar to claims 28 to 34, the English abstract of JP'574 discloses a method of producing ultra-low carbon steel sheet comprising the steps of refining molten steel alloy with decarburization by vacuum degassing and a secondary refining with deoxidizing by adding Al. Prior art steel slab is then subjected to hot rolling at 1000 to 1300C (within the claimed hot rolling temperature range of 1100C or greater). Although finishing temperature of at least Ar3 point as recited by claim 30 is not taught, such would be expected since starting temperature for hot rolling is already at 1000 to 1300C. Prior art steel is then subjected to coiling at no higher than 700C (overlaps claimed coiling temperature range of 450 to 750C), pickling, cold rolling, continuously annealing at 700 to 800C as evident by paragraph 14 on page 3 (overlaps claimed continuous annealing temperature of at least 750C) followed by temper rolling. Note that overlap in temperature ranges establishes a prima face case of obviousness. See MPEP 2144.05.

7. Even though cold rolling reduction of at least 45% as recited by claims 31 to 34 is not taught by prior art, such would not be a patentable difference, since it would be a matter of choice well within the skill of the artisan depending on the desired sheet thickness and known properties sought.

8. In regard to alloy composition, the English abstract of JP'640 discloses a steel with constituents whose wt% ranges overlap those recited by the claims; such overlap establishes a prima facie case of obviousness. Also prior art examples 9 to 12 on page 4 meet the claimed composition.

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9. Even though prior art does not teach FeO+MnO in the slag at no more than 15 mass% as recited by claim 28, such would be expected since composition and process limitations are closely met, and in absence of proof to the contrary.

10. Even though prior art does not teach casting at no more than 5 tons per minute as recited by claim 28, such would be the expected since it appears to be the conventional rate when casting thin metal sheet, as evident by secondary references. See English abstract of JP'889 teaches casting at 3 tons per minute, Taylor, line 46 of column 5 teaches casting at 2.84 tons per minute; and Olsson, line 46 of column 3 teaches 4 tons per minute.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 28 to 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 28 recites "FeO+MnO in the slag" yet there is no antecedent basis for slag in parent claim 27.

14. Claim 29 recites coiling temperature at "450 to 750C" yet there is no antecedent basis for coiling step in parent claim.

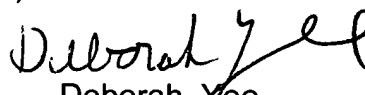
15. Claim 30 recites "hot rolled coiled" yet there is no antecedent basis for coiling.

16. The unapplied references have been cited to further depict the state of the art in refining low-carbon steel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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